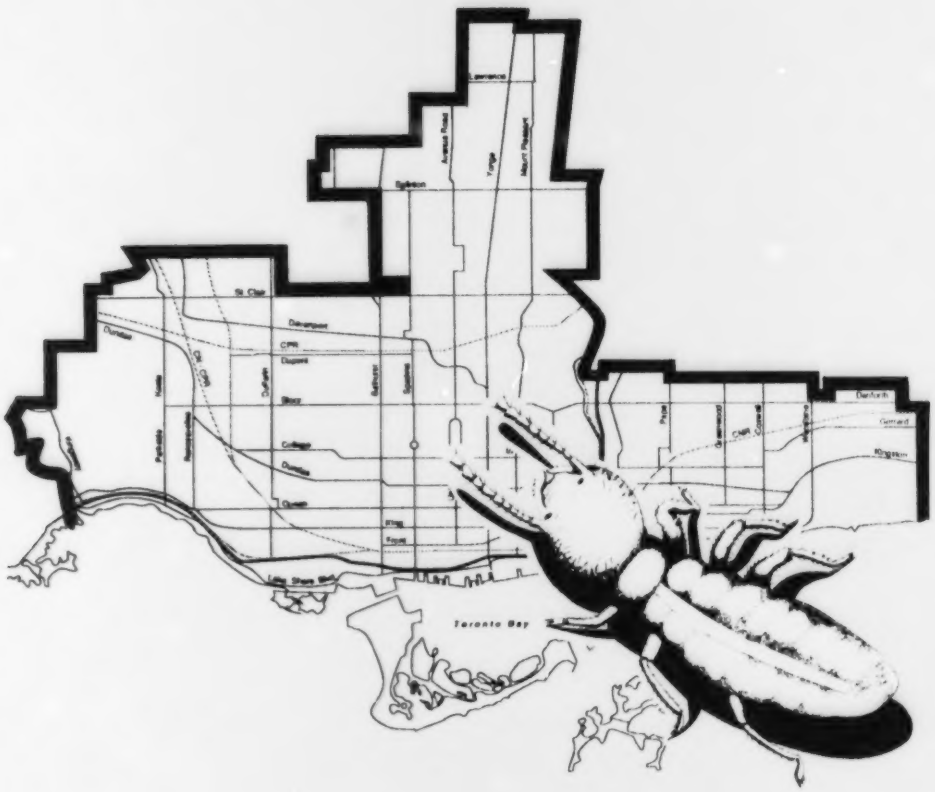
APRIL, 1989

1989

termite report

Termite and Carpenter Ant Control



City of Toronto Housing Department

Daniel Burns, Commissioner

89-03411/

SPECIAL THANKS TO:

Dr. J. Kenneth Grace, Project Director Urban Entomology, Faculty of Forestry, University of Toronto, whose input into the Sections on pesticides and the Termite Research Project is greatly appreciated.

Inquiries should be directed to:

* *Mr. Anwar Jafri, Senior Research Advisor, Policy and Programs Division, Housing Department (telephone: 392-7881), where they pertain to this report or the statistics on termites and carpenter ant control, and*

* *Mr. Don Jennings, Programs Manager, Policy and Programs Division, Housing Department (telephone: 392-7620), respecting the City's termite control program and the availability of grants for termite or carpenter ant control.*

TERMITE REPORT 1989

Termite and Carpenter Ant Control
April 1989

City of Toronto Housing Department
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$5.00

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Summary

- The purpose of this document is to report the extent of termite and carpenter ant infestations and their control in the City of Toronto.
- Termites were discovered for the first time in Toronto in 1938, but significant property damage caused by them was not noticed until the early 1960s.
- In 1988, 433 houses were approved for termite infestation treatment. This brings the total number of houses approved for treatment to 5,730 (1965-1987). Therefore, of the total house-form buildings in the City, about five percent have now been treated or approved for treatment.
- As a simple method of showing the spread of infestation, the number of City blocks where properties have been treated against termites are reported each year. In 1988, properties were approved for treatment in 10 new blocks bringing to a total 437 blocks affected in the City. The 437 blocks account for 14 percent of the total number of blocks in the City.
- Although only 5,730 houses have been approved for treatment in the affected blocks, there are a total of 23,391 houses located within these blocks. These 23,391 houses account for 20 percent of the City's total stock of house-form buildings.
- The cost of treating termite infestation in the City over the last five years (1984-88) has totalled $4.8 million. On average, this translates into expenditures totalling about $960,000 annually. Such expenditures are increasing as typified by expenditures which totalled about $1.14 million both in 1987 and 1988.
- Over the same period, grants to property owners from the City and Province totalled about $2.7 million leaving a sum totalling about $2.1 million spent by the homeowners themselves. These figures do not take into account additional costs to the homeowners which are beyond the cost of chemical treatment and wood-soil separation and are not eligible for termite control grants.
- In 1988, the average cost to a property owner of chemical treatment and that of wood-soil separation was $903 and $2,369 respectively, while the average provincial grant was $531 and $1,101 respectively.
- As at December 31, 1988, the provincial grants committed exceeded the funds received by the City from the Province by $382,174 due to the continuing shortfall between grants and funding.
- Of the City total, the East End has the most serious problem and accounted for:
  - 77 percent of the house-form dwellings approved for treatment between 1965 and 1988;
  - 78 percent of the blocks affected by termite infestation in one or more properties; and
  - 77 percent of the house-form dwellings located in 1988 within the infested blocks in Toronto.

- Within the East End:
  - more than one in ten house-form dwellings in the area (13%) has been affected by termite infestation between 1965 and 1988,
  - more than two out of five blocks in the area (43%) had been subjected to termite infestation, and
  - more than one in two house-form dwellings in the area (53%) were located, in 1988, within the blocks where one or more properties were affected by termites.
- In the meantime, infestation has also been spreading in sections of the Central City, more particularly in Area 4.
- The traditional treatment with pesticides has been successful in eradicating termites from an infested property, but treatment does not necessarily prevent termites from attacking any untreated properties since termites can safely thrive in almost impossible to detect colonies,
- Traditional pesticides used in Ontario for termite control have caused public health and environmental concerns and their use has either been suspended or banned in several States in the U.S. The City's Public Health Department is considering ways of restricting their use in favour of other alternatives.
- The special termite research project established in January 1987, at the Faculty of Forestry, University of Toronto, on the initiative of the City of Toronto, aims at developing an integrated termite control program.
- The project being funded by government and other concerned bodies, will focus on developing safe, effective and environmentally compatible methods of termite detection and control that would reduce the use of pesticides.
- Carpenter ant infestation, which generally occurs in more wide spread locations, has been recorded or treated between 1966 and 1988 in 327 properties located in 262 City blocks.
- In 1988, 29 properties were approved for treatment of carpenter ant infestation at an average cost to a homeowner of $296 and the average City grant of $72.00. During 1988, 22 new City blocks were added to the list of blocks where carpenter ants have so far been recorded.

Introduction

INTRODUCTION

The 1983 Study

In May 1983 the City of Toronto Planning and Development Department, in co-operation with the City's Buildings and Inspections Department, published a comprehensive study under the title - **A Review and Evaluation of Toronto's Termite Control Program**. That study, along with a concise version highlighting its findings in the form of Research Bulletin 21 (entitled **The Edible City**), was submitted to City Council through its Neighbourhoods Committee in June 1983.

The 1983 study outlined the history of the termite problem and dealt with the nature of the insect and the geographic distribution and intensity of infestation in the City of Toronto to the end of 1982. It also traced the evolution of the City's termite control program and evaluated its operation in terms of effectiveness, including effectiveness of chemical and physical methods of prevention and treatment. It included a review and discussion of the relevant legislation, pointed out the areas where action was required and made recommendations for dealing more effectively with the problem. The study also included information on the carpenter ant infestation and treatment program. Although carpenter ant infestation is not eligible for provincial grants, the City of Toronto provides grants for treatment from its own financial resources.

The statistics quoted in the study published in 1983 were for the period up to about the end of 1982. Because of the manner in which records were maintained in the past, separation of statistics on termite and carpenter ant infestation was not possible until 1983. Therefore, the statistics up to 1982 for Areas 4 to 9 might have included a (small) number of carpenter ant cases. As no active termite infestation has come to the City's notice in Areas 1, 2, 3, 10 and 11 since the introduction of termite control program in 1965, past statistics for those Areas, reported in the 1983 study, can be assumed to relate exclusively to carpenter ants. However, from 1983 onwards, separate statistics for termite and carpenter ant infestation for all parts of the City are being maintained.

The Termite Report Series

The present report is the fifth in the annual **Termite Report** series. The series, began originally in 1985 at the City's Planning and Development Department, was published under the title "Termite Monitor". Following reorganization of the Planning and Development, Housing, and Buildings and Inspections Departments in 1988, the responsibility for termite control, along with the production of the annual report on the subject, was assigned to the Housing Department, which is publishing the report for the first time in 1989.

The purpose of the report is to serve:

- as a progress report to City Council on matters relevant to the City's Termite Control Program, and
- as an annual report on the operation of the Termite Control Program, required from the City by the provincial Ministry of the Environment as a condition for continuing its financial support.

The report is also of interest to property owners, real estate professionals and other concerned groups and individuals.

The term Area(s) is used in this report to refer to the area(s) of the former (eleven) municipal wards which were in force in the City until the civic elections held in November 1988. Maps 3 and 4 show the boundaries of the current and the former City Wards. The relationship of the former wards with the current ones is described following Map 6.

The statistics and maps presented in this report reflect the situation based on the City's Termite Control Program and do not take into account the cases which might have been treated privately and of which the City has no record.

Section 1

Termite Control

Termite Control

What are termites?

In Toronto, termites were first discovered on the shores of Toronto Bay in 1938, but the seriousness of the damage which they could cause was not recognized until the early 1960s.

Southern Ontario, including Toronto, has only one species of termite: the Eastern Subterranean termite (technically known as Reticulitermes flavipes). In colour and size it resembles a grain of rice. Termites live in moist soil in colonies. These colonies are almost impossible to detect and eliminate as they may exist deep in the ground. Occasionally colonies may be found feeding on certain trees but they probably cause no serious damage to living and healthy trees. Each colony sends out foragers in search of food, and their food is mainly cellulose extracted from wood.

Termites are social insects divided into reproductive (king and queen), soldier and worker castes. Worker termites are the ones which do the actual damage to the property by attacking and feeding on wood in buildings. The workers build earthen shelter tubes or tunnels on walls, foundations, and other surfaces to enter the building through holes, cracks or other openings. After feeding themselves, the workers return to the colony and regurgitate the digested wood as food for members of other castes. While entering and feeding on the inside of wood, termites may leave the surface shell of the wood intact. Their presence, therefore, may not be discovered before considerable damage has already occurred. Discovery of shelter tubes is generally the only clear sign that the property is being attacked.

Treatment effective but termites can move onto unprotected properties

Termites can cause serious damage to homes or other buildings where wooden structural members are used. For years now, they have been spreading slowly but surely across the City and adjacent municipalities. Through its ongoing termite control program, the City has been able to prevent further damage to each property that is treated against termites. Yet, treatment does not prevent termites, which can thrive safely in their almost inaccessible colonies, from attacking any untreated properties. Each year new cases of infestation are discovered and new neighbourhoods are affected in the City.

Five percent of houses in the City of Toronto affected

The Termite Control Grants Program was introduced in Toronto in 1965. Between then and 1988, termite infestation has been discovered or treated in 5,730 houses within the City. The houses affected by termites accounted for:

- about 5 percent of the City's entire stock of 116,384 house-form dwellings (non-apartment type) buildings;
- 9 percent of the East End and Central City Area's (4-9) combined stock of 61,230 house-form buildings; and
- 24 percent of the combined stock of 23,391 house-form buildings located within the termite infested sections of Areas 4-9 (Appendix 1.4).

Although infestation has not yet spread to the western and northern sections of the City (Areas 1, 2, 3, 10, and 11), termites pose a potentially serious danger to house-form dwellings throughout the City and beyond. In the last five years (1984-88), chemical treatment and other remedial and preventative measures have cost the property owners, the City and the provincial government, about $4.8 million or on average about $960,000 annually in Toronto. Both in 1987 and 1988, the cost was about $1.14 million annually. These figures do not take into account additional costs to the homeowners which are beyond the cost of chemical treatment and wood-soil separation and are not eligible for termite control grants.

More than three out of every four houses where infestation was recorded and which were approved for treatment (77%) between 1965 and 1988, were located in the East End (Areas 7-9). However, infestation has also been spreading steadily into certain sections of the Central City (Areas 4-6) (Appendix 1.1 and Map 3).

Areas 8 and 7 accounted for the largest share (58%) of the houses affected by termites, as the following breakdown in descending order indicates:

Area 8, 32 percent,
Area 7, 26 percent,
Area 9, 19 percent,
Area 6, 13 percent,
Area 4, 8 percent, and
Area 5, 2 percent.

The houses approved for treatment between 1965 and 1988, accounted for 13 percent and 5 percent respectively of the total house-form buildings located in the East End and the Central City (Appendix 1.4). In 1988, the City approved 433 houses for treatment. Figure 1 and Table 1.1 illustrate the incidence of infestation in terms of the number of houses treated or approved for treatment, broken down by the East End and the Central City.

Figure 1
Incidence of Termite Treatment
City of Toronto
1965-1988

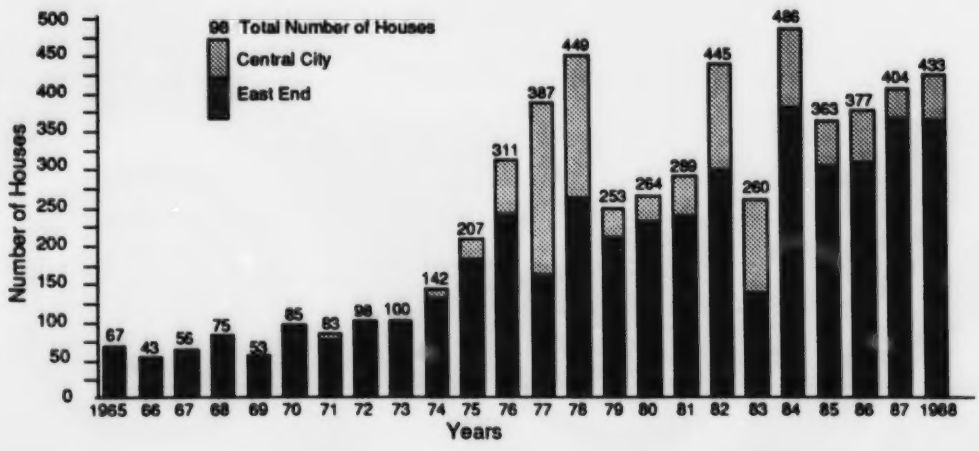


Table 1.1

Houses Treated or Approved for Treatment by Period and Area[1]

Period	East End Areas 7-9 #	%	Central City Areas 4-6 #	%	Total #
1965-80	2,037	76	636[2]	24	2,673
1981	236	82	53	18	289
1982	303	68	142	32	445
1983	136	52	124	48	260
1984	379	78	107	22	486
1985	302	83	61	17	363[3]
1986	306	81	71	19	377
1987	365	90	39	10	404
1988	367	85	66	15	433
TOTAL	**4,431**	**77**	**1,299**	**23**	**5,730**

1 Houses may not be necessarily treated within the calendar year in which their treatment is approved.

2 Including 424 houses in Kensington area treated not under the Termite Control Program but under the Neighbourhood Improvement Program from 1976 to 1978.

3 Excluding two houses already treated chemically and accounted for prior to 1985 but for which grants for wood-soil-separation work were approved in 1985. The two lots in Areas 1 and 2, where no active infestation was found but which were treated before construction of houses, are also excluded.

Termites recorded in 14 percent of the City blocks

Another way of looking at the seriousness of the termite problem is to examine it in terms of the number of City blocks where infestation has already affected one or more properties and is most likely to spread to others in future. Of the 3,080 blocks in Toronto, infestation has been documented to the end of 1988, in 437 or about 14 percent of blocks; of these, 149 were found infested before 1965. The affected blocks accounted for 25 percent of the 1,699 blocks within the combined areas of the East End and the Central City (Areas 4-9) (Appendix 1.3). About four out of every five affected blocks in the City, were located in the East End. The ratio of blocks affected by termite infestation, of total blocks, was 43 percent in the East End and 11 percent in the Central City.

The ratios of affected blocks, of the total, were the highest in the East End Areas 8, 7 and 9 (Appendices 1.2 and 1.3) followed by others in descending order:

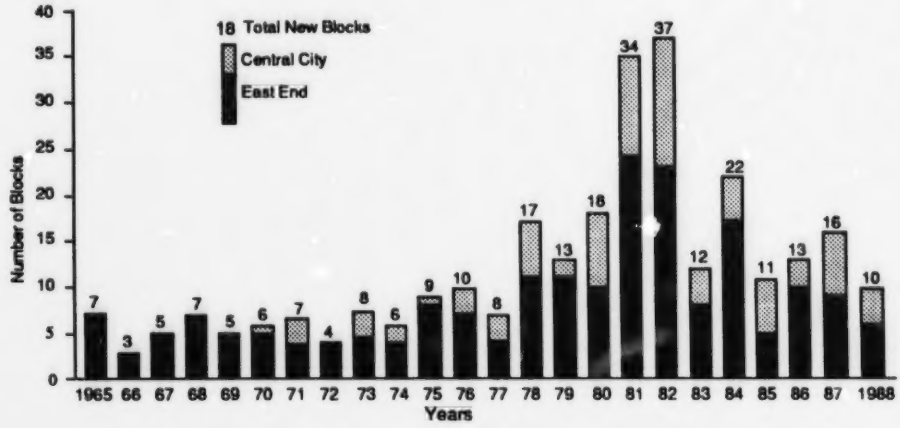
Area 8, 44 percent,
Area 7, 43 percent,
Area 9, 43 percent,
Area 4, 16 percent,
Area 5, 10 percent, and
Area 6, 9 percent.

In 1988 of the 437 total blocks so far affected, houses were approved for treatment in 145 blocks, including 10 new blocks, of which 6 were in the East End (Appendices 1.2 and 1.5). Maps 1, 2, 4 and 5 show the growth and distribution of termites from 1949 to 1988. Map 6 shows new areas becoming subjected to infestation from 1981 to 1988. Table 1.2 and Figure 2 illustrate the spread of infestation in terms of number of blocks where infestation has been discovered to the end of 1988.

Table 1.2
Geographic Distribution of Blocks
Affected by Termite Infestation by Year

Year	Cumulative Number of Blocks				
	East End Areas 7-9		Central City Areas 4-6		Total
	#	%	#	%	#
1965	145	93	11	7	156
1970	170	93	12	7	182
1975	195	90	21	10	216
1980	239	85	43	15	282
1983	293	80	72	20	365
1984	310	80	77	20	387
1985	315	79	83	2	398
1986	325	79	86	21	411
1987	334	78	93	22	427
1988	340	78	97	22	437

Figure 2
Annual Termite Infestation - New City Blocks
1965-1988



Note: Infestations had already been recorded in 149 blocks-
138 in the East End and 11 in the Central City before 1965

Potential Danger to One in Five Houses in the City

Presently 23,391 or about 20 percent of the City's existing house-form dwellings are located within the 437 blocks where one or more houses have been affected by infestation. The affected blocks are confined to the East End and the Central City areas and account for 38 percent of the 61,230 house-form buildings located within those areas (Appendix 1.4). The situation is very serious in the East End where the ratio of house-form buildings located within affected blocks is 53 percent compared with 20 percent in the Central City Areas.

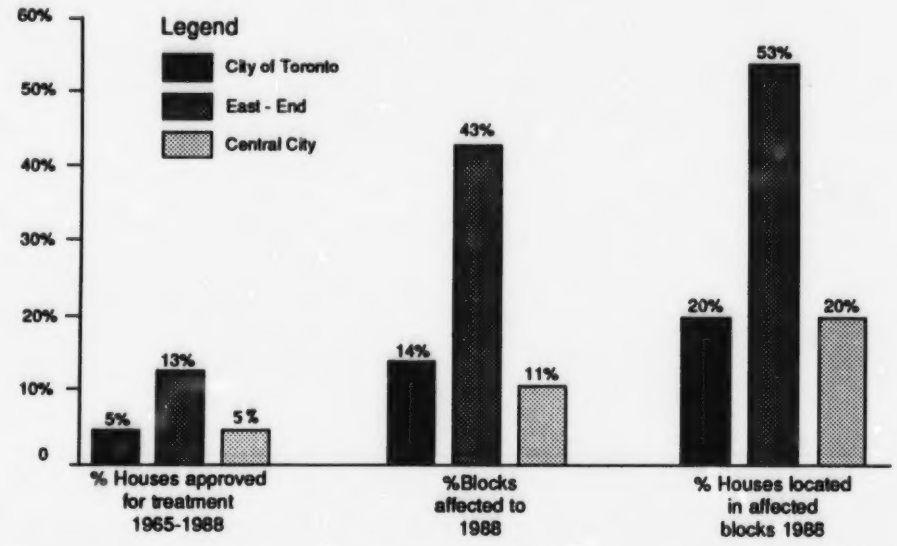
Areas 7 and 8 rank at the top:

Area 7, 65 percent,
Area 8, 51 percent,
Area 9, 49 percent,
Area 4, 25 percent,
Area 6, 18 percent, and
Area 5, 17 percent.

The scope of the potential danger increases as infestation spreads to new blocks. The 10 new blocks added to the list in 1988 contain 354 house-form dwellings of which 19 were approved for grants for treating infestation.

Figure 3 illustrates the extent of the termite problem relative to the City of Toronto, as a whole, the East End and the Central City areas.

Figure 3
Extent of Termite Problem by Areas
1988



Grants available to prevent and remedy infestation

A homeowner can take advantage of the provincial and municipal grants available through the City of Toronto for treatment of termite infestation. The provincial grants can cover 60 percent of the combined cost of the work, including chemical treatment and wood-soil separation, not exceeding $2,000. A grant which can cover 60 percent of the cost of chemical treatment not exceeding $1,000, is also available to property owners for the pre-treatment of land on which a house is to be built for the owner's residence. City of Toronto Termite Control By-law No. 189-73, as amended (by By-law No. 488-82), requires pre-treatment of house sites where wooden structural members are used in buildings.

Additionally a grant equal to 25 percent of the cost of chemical treatment to a maximum of $125 is available to homeowners from the City's own resources. Thus an eligible property owner can be granted a combined total of up to $2,125.

Table 1.3 provides statistics on provincial and City grants from 1983 to 1988.

Table 1.3

Termite Control Grants Approved

Year	Provincial Grants: Chemical Treatment #	Provincial Grants: Chemical Treatment $	Provincial Grants: Wood-Soil Separation #	Provincial Grants: Wood-Soil Separation $	Total Prov. Grants $	City Grants for Chemical Treatment #	City Grants for Chemical Treatment $	Total Grants $
1983	246	69,846	187	145,129	214,975	260	28,457	243,432
1984	470*	149,014	247	247,314	396,328	484*	58,931	455,259
1985	365	122,709	247	299,957	422,662	365	44,860	467,522
1986	374*	181,277	269	280,065	461,342	377*	46,822	508,164
1987	404	216,337	294	325,980	542,317	404	50,446	592,763
1988	433	230,080	317	349,218	579,298	433	53,984	633,282

* *The significant difference in the number of provincial and city grants in 1984 was accounted for by the applicants who were content with the City grants an did not want to wait until the resumption of provincial grants which remained suspended in most of 1983 and earlier months of 1984. The difference in 1986 is accounted for by two rooming houses and one house treated with nematodes not eligible for provincial grants.*

Table 1.4 provides figures on average costs and average provincial grants for chemical treatment and wood-soil separation work and the City grants from 1984 to 1988. The average cost of and the average grant for the wood-soil separation was lower in 1988 than in 1987. This was accounted for largely by approval for wood-soil separation grant in 1988, of a significant number of row-houses which could be treated at considerably lower costs than detached or semi-detached houses.

Table 1.4

Average Cost and Average Termite Control Grant

Year	Average Cost		Average Prov. Grant		Houses Requiring Wood-Soil Separation	Average Municipal Grant
	Chemical Treatment $	Wood-Soil Separation $	Chemical Treatment $	Wood-Soil Separation $	%	$
1984	531	2,187	317	1,061	53	122
1985	562	2,645	366	1,214	67	123
1986	813	2,099	485	1,041	71	124
1987	898	2,654	535	1,116	72	125
1988	903	2,369	531	1,101	73	125

Grants approved and funds received from the Province since 1984

Prior to 1984, provincial grants were approved on the City's recommendation and were distributed directly by the Ministry of the Environment. Under a revised agreement in 1984, the Province delegated the approval and distribution of provincial grants to the City.

Table 1.5 is an account of the provincial grants approved and the funds received by the City, for chemical treatment and wood-soil separation since May 1984.

As at December 31, 1988 there was a shortfall of $382,174 in funds versus the approved grants. The City has to exceed commitments over funds in order to avoid delays in approving applications for grants. However in view of the continuing problem of shortfall for a long time, the Provincial Ministry of the Environment will be requested to increase it's funding to the City to $600,000 annually.

Table 1.5

Grants and Provincial Funding
Since 1984

Year	Grants Approved $	Grants Cancelled[1] $	Net Grants Approved $	Prov Funds Received $	Shortfall or Excess of Funds Over Grants $
	53,045[2]				
	396,328				
1984	449,373		449,373	366,457	(82,916)
1985	422,666	28,296	394,370	595,382	201,012
1986	461,342		461,342	325,200	(136,142)
1987	542,317		542,317	300,000	(242,317)
1988	579,298	71,887	507,411	385,600	(121,811)
TOTAL	**2,454,996**	**100,183**	**2,354,813**	**1,972,639**	**(382,174)**

1 Because applicants failed to utilise grants.

2 Shortfall of funds versus the grants, carried over from 1983.

Pesticides cause health and safety concerns

The treatment of termite infested properties in Ontario with organochlorine pesticides (Chlordane, Aldrin and Dieldrin), has proved quite effective and long lasting. However, recent research indicates that termite colonies can contain over one million insects and extend through the ground far from the infested building. Treatment cannot eradicate these widespread colonies. Furthermore, recent evidence presented on the possible chronic harmful effects on these chemicals, although not incontrovertible, is causing increasing concern from the point of view of public health and the environment.

In the United States, the manufacturer voluntarily suspended the production and sale of chlordane in August 1987, and its use is prohibited in several states. Currently, none of these pesticides are produced nor imported into Canada, and only aldrin remains in significant supply in Ontario. The existing stock is expected to last no more than six or seven years and the City's Public Health Department is considering ways of further restricting their use in favour of other alternatives.

An alternative soil insecticide chlorpyrifos (Dursban) is already registered and available in Canada, and other compounds now available in the United States may also be registered for use here. Although there is no evidence of chronic harmful effects as with the organochlorine pesticides, the alternatives are not free from poisonous ingredients and are more expensive. Moreover, the treatment may have to be repeated more frequently to maintain the protective barrier.

Termite research project aimed at developing better approaches

The danger to property posed by termites, on the one hand, and the potential problems associated with the use of pesticides on the other, point out the need for new approaches. "These new approaches should take into account the potential public health, environmental, legal and financial consequences of pest control methodology, and must be appropriate for use in urban settings. The establishment of the termite research project is an important step in that direction... The goal of the project is to substantially advance the development of safe, effective and environmentally acceptable methods of subterranean termite control through basic and applied research and extension efforts."* The project entitled "Development of an Integrated Control Program for the Eastern Subterranean Termite" began functioning in January 1987 under the direction of Dr. J. Kenneth Grace, at the Faculty of Forestry, University of Toronto.

In its first year of operation, research facilities were established at the University, termite problems in Ontario were surveyed, and an operating plan was developed to guide the project. Research progress in 1988 included:

- developing new methods of collecting and maintaining termites, and of studying field populations;
- determining if the individual termite colonies are larger than previously thought, and may cover areas larger than 1,000 square metres, extending beneath roadways and containing over one million individuals;
- monitoring seasonal changes within termite populations to find the times when they are particularly susceptible to control methods;
- identifying fungi (disease organisms) that are harmful to termites, or might otherwise be used to control them;
- identifying chemicals in local plants and fungi that are harmful to termites, or that might be used to attract them to poisoned baits;
- testing new and safer wood preservatives.

* *Dr. J. Kenneth Grace - Development of An Integrated Control Program for the Eastern Subterranean Termite, August 1987, Faculty of Forestry, University of Toronto.*

The project is estimated to cost $1.5 million and is being funded by the City of Toronto, other municipalities affected by termites in southern Ontario, the Government of Ontario, the Canada Mortgage and Housing Corporation, and private and public granting agencies. The City has already contributed $200,000, at the rate of $50,000 each year from 1985 to 1988. In response to the Termite Monitor 1988, the Minister of Housing for Ontario approved a contribution of $150,000 to the project in 1988, and the Canada Mortgage and Housing Corporation has pledged $150,000. The Ontario Ministry of the Environment, which finances the termite control grants, committed $100,000 for research on the problem and contributed $14,700 to the project in 1988. With the research well under way, additional financial support is needed to meet the budget requirements outlined in the project operating plan. The Toronto City Council has already been requested to contribute an additional $50,000 each year for 1989 and 1990.
An advisory committee was established in 1987 under the chairmanship of Mr. Donald M. Baxter, Executive Director of the Economic Development Division of the Municipality of Metropolitan Toronto, with representative of appropriate public and private bodies. The committee both monitors research progress and advises on fundraising.

Over two dozen municipalities in southern Ontario are affected by termites. The recent discovery of termites in Winnipeg, Manitoba, indicates that very few regions are really immune from termite attack once they are introduced in wood or topsoil. So far, only eleven municipalities have contributed to the project, although others are considering commitments. Total commitments to the project amount to $833,487 of which the University has so far received $634,587 (Table 1.6).

Table 1.6

Commitment and Contribution of Funds for Termite Research Project

	Source	Commitment	Contribution Received
1.	Canada Mortgage and Housing Corporation	$150,000	$ 85,000
2.	Ontario Ministry of Housing	150,000	150,000
3.	Ontario Ministry of the Environment	100,000	14,700
4.	Town of Dresden	247	247
5.	Borough of East York	10,000	10,000
6.	City of Etobicoke	30,000	30,000
7.	City of Guelph	22,965	22,965
8.	City of Hamilton	45,000	30,000
9.	Town of Leamington	3,200	3,200
10.	City of North York	56,000	22,400
11.	Town of Oakville	8,000	8,000
12.	Township of Pelee	75	75
13.	City of Scarborough	40,000	40,000
14.	City of Toronto	200,000	200,000
15.	George Cedric Metcalfe Charitable Foundation	10,000	10,000
16.	Ontario Real Estate Association Foundation	5,000	5,000
17.	Toronto Real Estate Board	3,000	3,000
	TOTAL	$883,487	$634,587

Employment and Immigration Canada is also contributing to staff salaries through job placement programs. Further commitments and contributions are under consideration by the City of Winnipeg, City of Mississauga, and other Ontario municipalities.

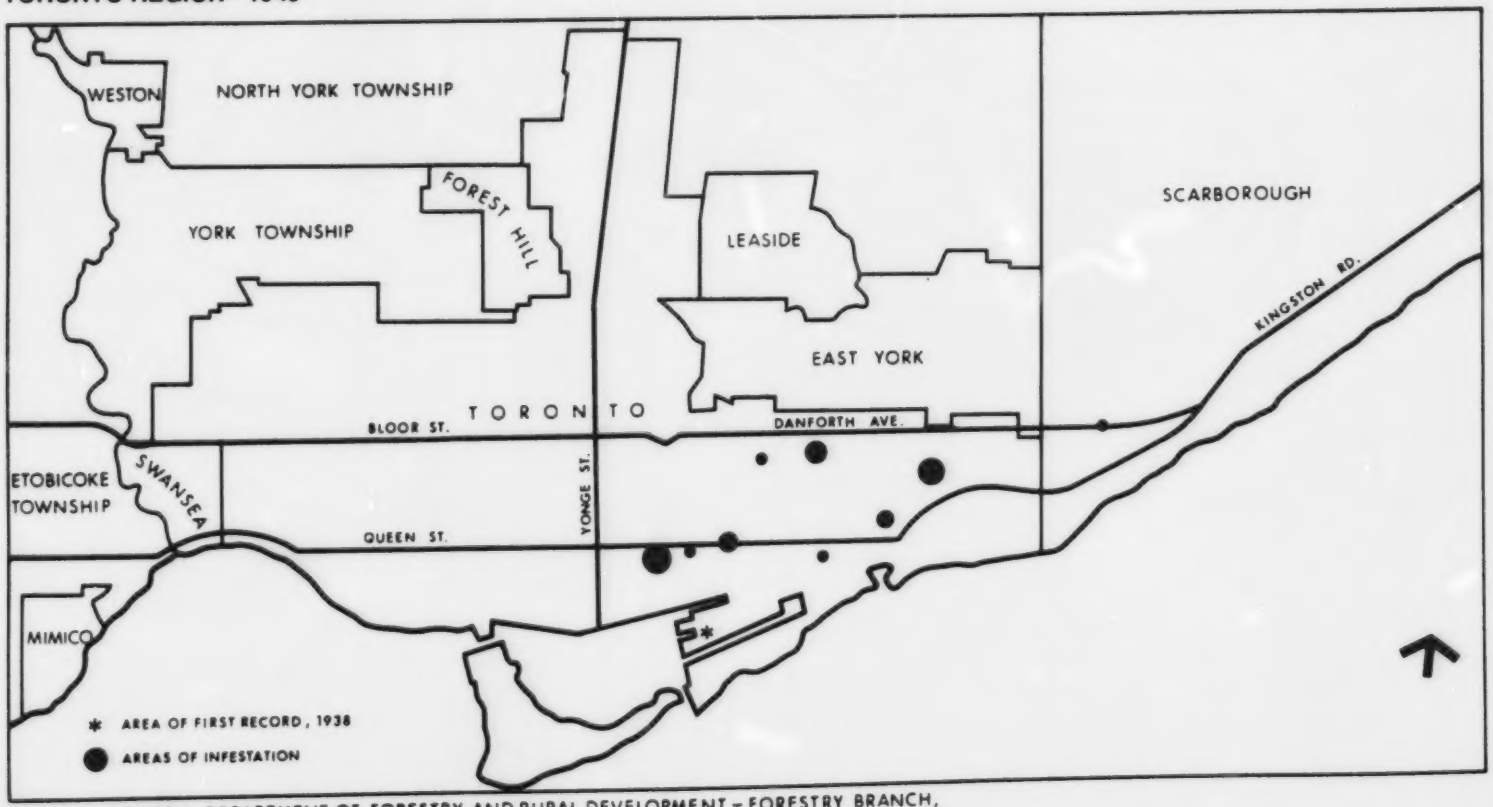
The following professional organizations have already passed resolutions in support of the research project:

1. Association of Municipalities of Ontario, December 7, 1985,

2. Canadian Association of Housing and Renewal Officials, May 26, 1986, and

3. Ontario Building Officials Associations, October 21, 1986.

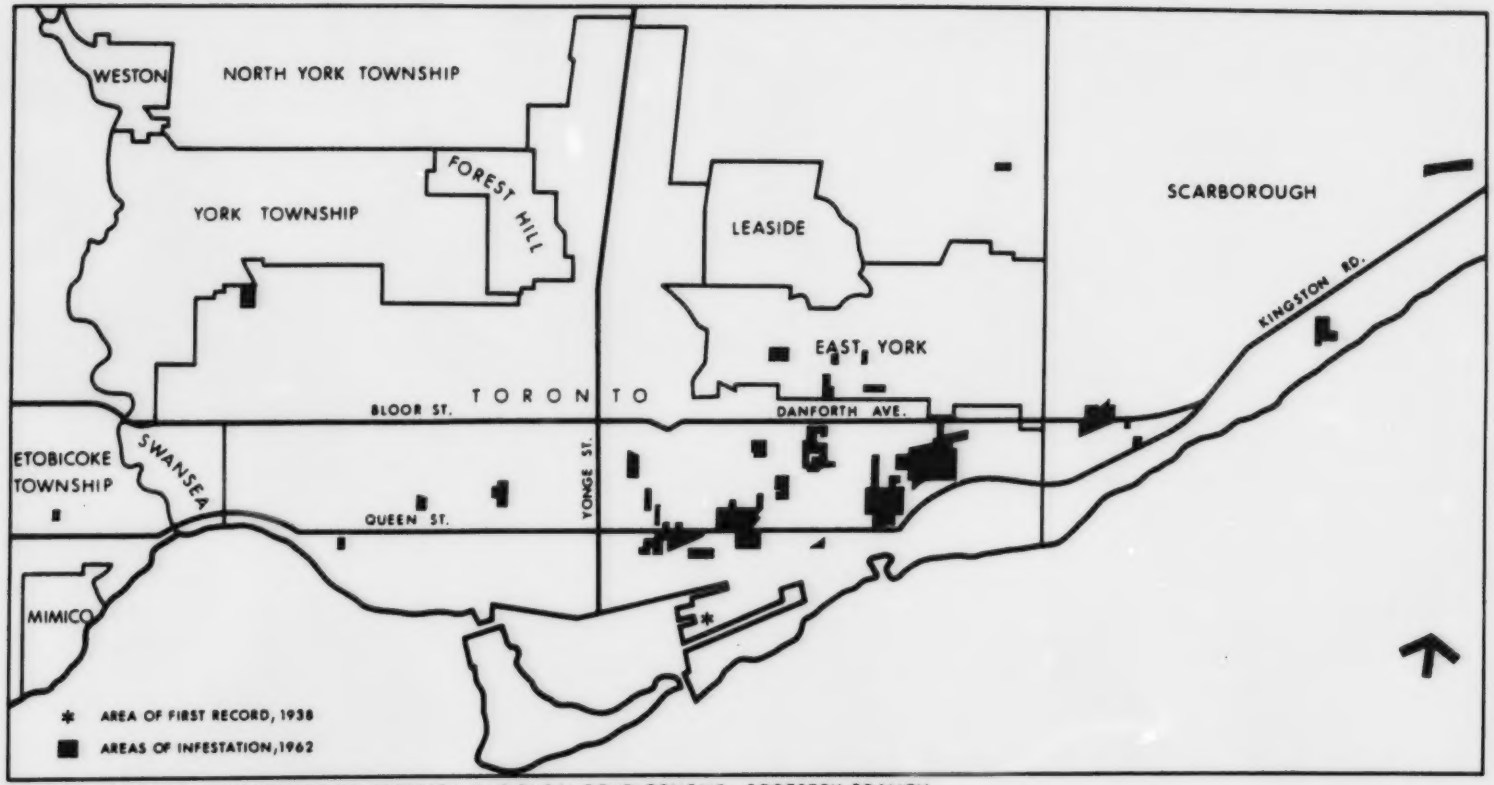
TERMITE DISTRIBUTION
TORONTO REGION - 1949



SOURCE : CANADA DEPARTMENT OF FORESTRY AND RURAL DEVELOPMENT – FORESTRY BRANCH, INFORMATION REPORT 1963-1, APRIL 1963, "TERMITES IN ONTARIO WITH PARTICULAR REFERENCE TO THE TORONTO REGION"

Map 1

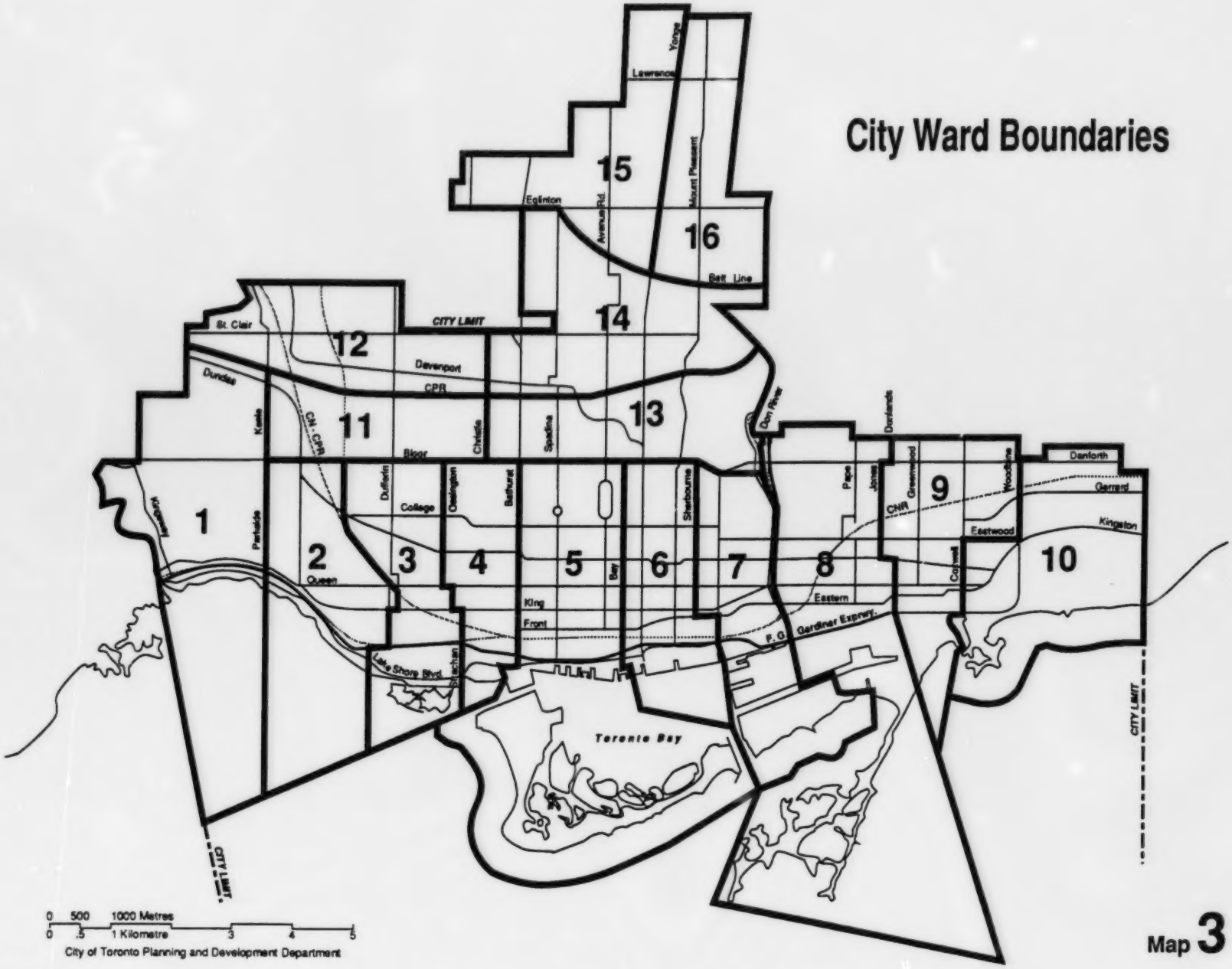
TERMITE DISTRIBUTION
METROPOLITAN TORONTO - 1962



SOURCE : CANADA DEPARTMENT OF FORESTRY AND RURAL DEVELOPMENT – FORESTRY BRANCH, INFORMATION REPORT 1963 – 1, APRIL 1963, "TERMITES IN ONTARIO WITH PARTICULAR REFERENCE TO THE TORONTO REGION"

Map 2

City Ward Boundaries



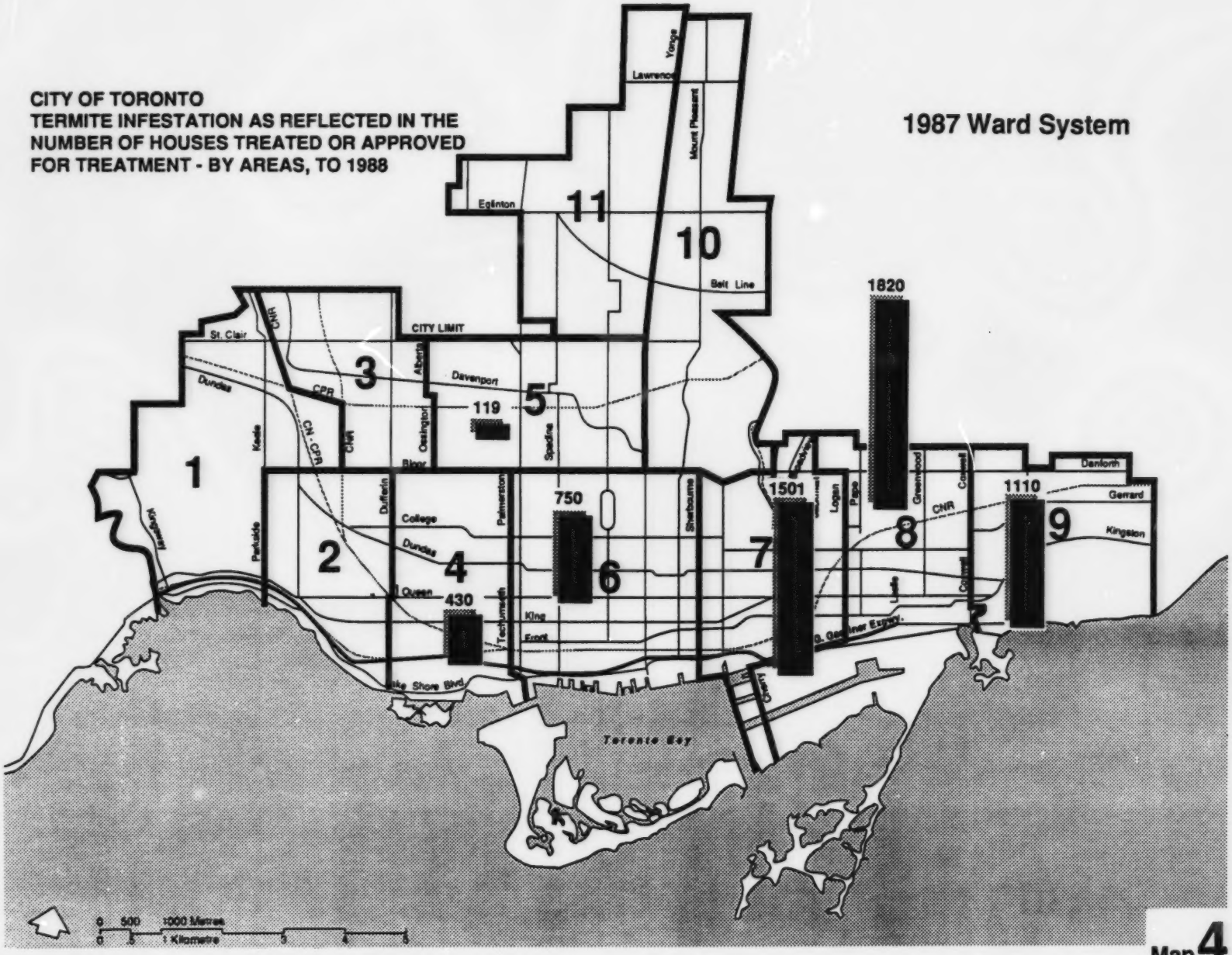
0 500 1000 Metres
0 .5 1 Kilometre 3 4 5

City of Toronto Planning and Development Department

Map 3

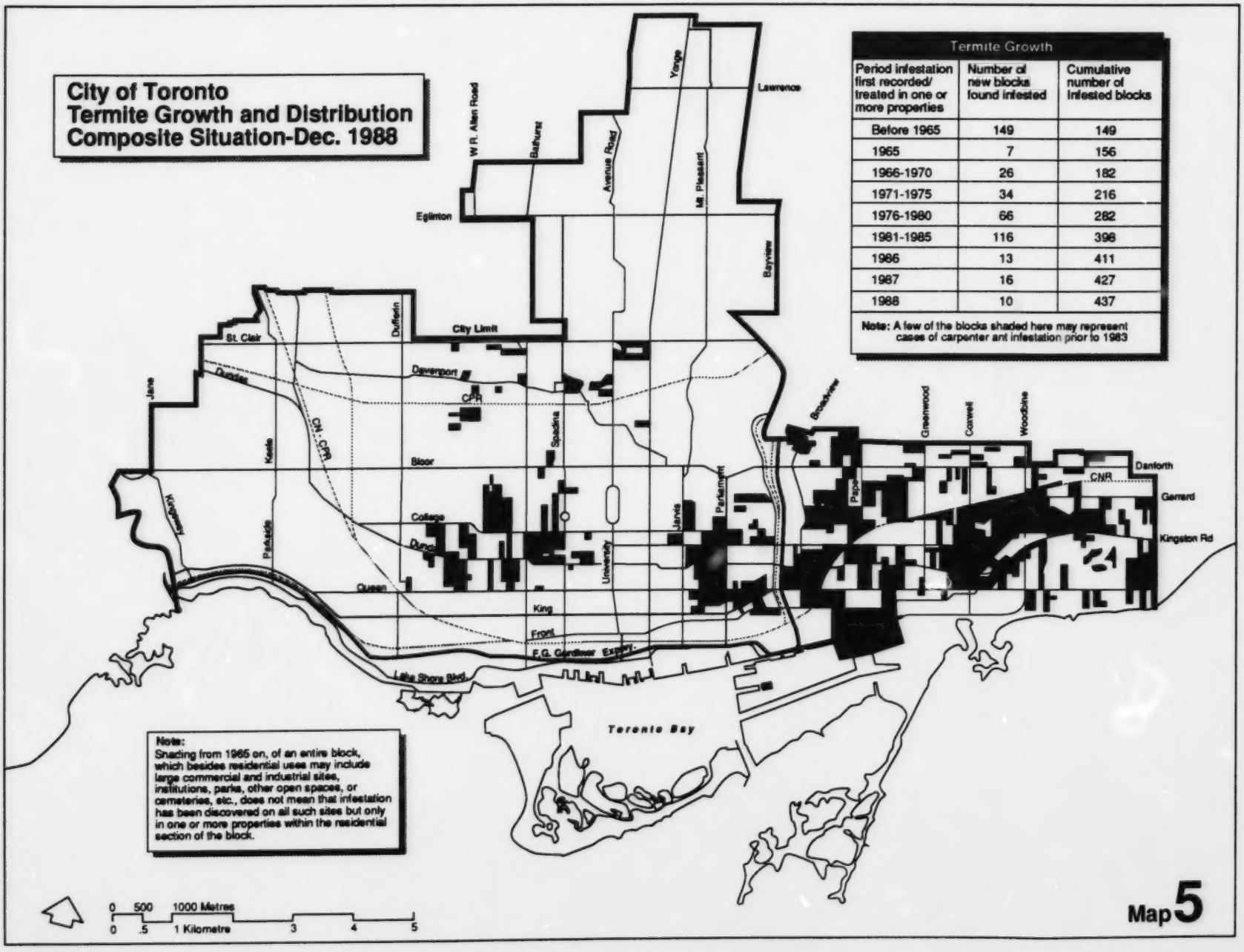
CITY OF TORONTO
TERMITE INFESTATION AS REFLECTED IN THE NUMBER OF HOUSES TREATED OR APPROVED FOR TREATMENT - BY AREAS, TO 1988

1987 Ward System



Map 4

City of Toronto
Termite Growth and Distribution
Composite Situation-Dec. 1988



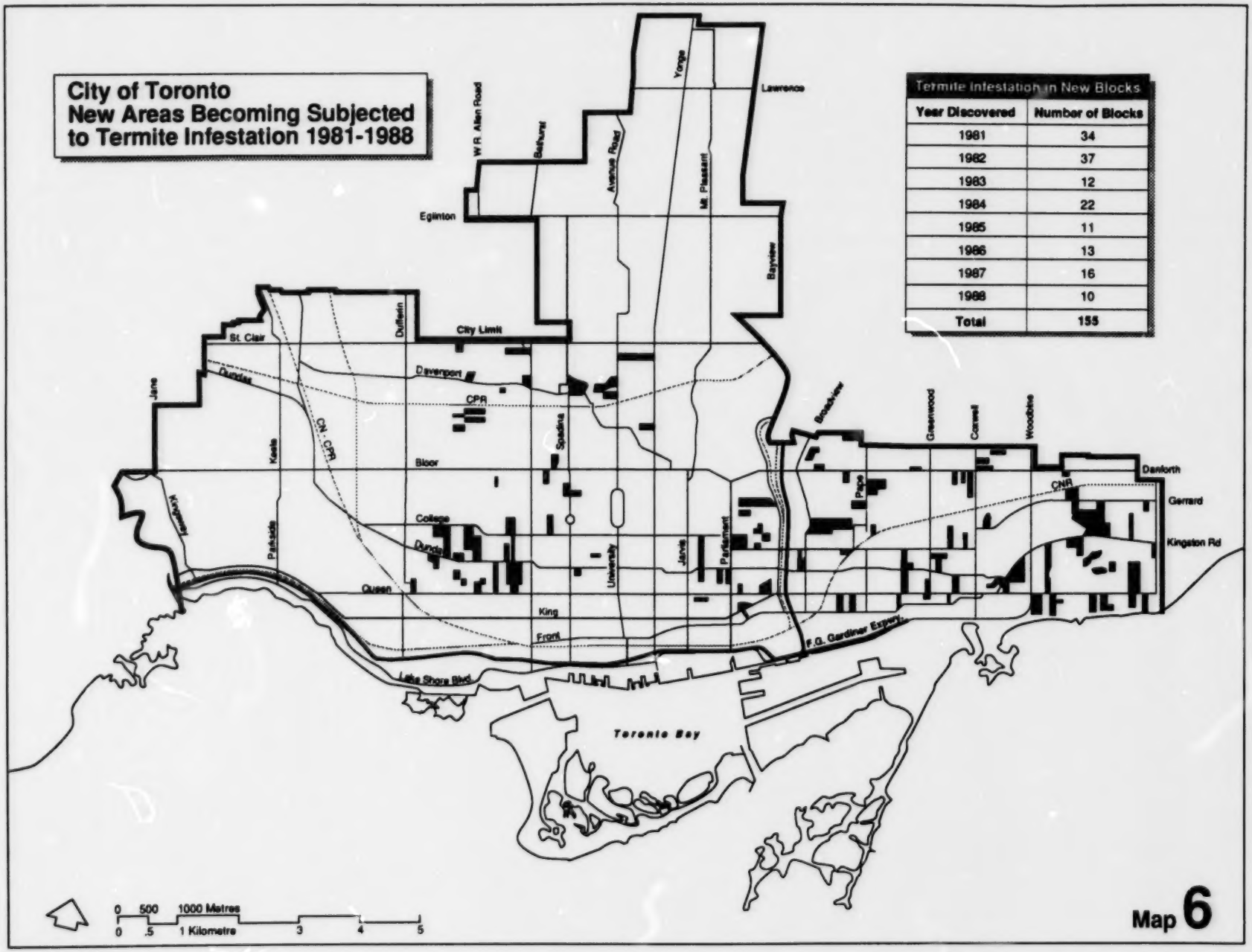
Termite Growth		
Period infestation first recorded/ treated in one or more properties	Number of new blocks found infested	Cumulative number of infested blocks
Before 1965	149	149
1965	7	156
1966-1970	26	182
1971-1975	34	216
1976-1980	66	282
1981-1985	116	398
1986	13	411
1987	16	427
1988	10	437

Note: A few of the blocks shaded here may represent cases of carpenter ant infestation prior to 1983

Note:
Shading from 1965 on, of an entire block, which besides residential uses may include large commercial and industrial sites, institutions, parks, other open spaces, or cemeteries, etc., does not mean that infestation has been discovered on all such sites but only in one or more properties within the residential section of the block.

Map 5

City of Toronto
New Areas Becoming Subjected to Termite Infestation 1981-1988



Termite Infestation in New Blocks

Year Discovered	Number of Blocks
1981	34
1982	37
1983	12
1984	22
1985	11
1986	13
1987	16
1988	10
Total	155

Map 6

RELATIONSHIP OF THE FORMER WITH THE CURRENT CITY WARDS

Map 3 shows the boundaries of the current City wards. Map 4 shows the boundaries of the former eleven municipal wards as they were constituted until the civic election held in November, 1988. The following illustrates the relationship of the former wards, referred to in this report as Areas with the sixteen current City Wards.

Former Wards* Current Wards

East End

Wards 7, 8, 9: The entire Wards 7, 8, 9 and 10 and the small south eastern section of the current Ward 6

Central City

Wards 4, 6: The section of Ward 3 located east of Dufferin Street, the entirety of Wards 4, 5 and 6, with the exception of the small south eastern section of Ward 6 which is located within former Ward 7

Ward 5: The sections of Wards 11 and 12 located west of Alberta Street and Ossington Avenue and the Sections of Wards 13 and 14 located between Christie Street and Yonge Street south of St.Clair Avenue West and the north City limits

West End

Ward 1: The entire Ward 1, the section of Ward 11 located between Keele Street and the Canadian National Railway (one block west of Campbell Avenue) and the Section of Ward 12 representing the Junction triangle

Ward 2: The entire Ward 2 and the section of Ward 3 between Dufferin Street to the east and the Canadian Pacific Railway to the west

Ward 3: The section of Ward 11 between Ossington Avenue to the east and the Canadian National Railway to the west and the sections of Ward 12 between Alberta Avenuect the east and eastern boundary of the Junction triangle to the west

North Toronto

Ward 10: The sections of Wards 13, and 14, east of Yonge Street and entirety of Ward 16

Ward 11: The section of Ward 14 west of Yonge Street and north of St. Clair Avenue West and the entirety of Ward 15

**Referred to in this report as "Areas".*

Section 2

Carpenter Ant Control

CARPENTER ANT CONTROL

Although the enabling provincial legislation, as well as the City's Termite Control Program apply to all wood-destroying insects, including carpenter ants, provincial grants are available only for treatment of termite infestation. However, the City of Toronto has been providing carpenter ant control grants from its own funds since 1966. Compared with termites, carpenter ants pose a considerably lesser threat and can be treated more easily at a smaller cost. However, chemical treatment for carpenter ants lasts for a relatively shorter period compared with that for termites, and may have to be repeated more frequently.

Carpenter ants not as serious a threat as termites

Compared with the scale of termite infestation, measured in terms of the number of houses and city blocks which have been subjected to infestation, a much smaller number of properties has been affected by carpenter ants (Tables 2.1 and 2.2, Map 7 and Appendices).

The City has been getting carpenter ant control grant applications in small numbers since 1966. Cases of carpenter ant infestation are widely distributed. For example, the average number of applications approved per block, where infestation has been reported since 1966, is only 1.2. In 1983, the first year that accurate statistics on carpenter ants began to be maintained, the north-end Areas, 10 and 11, accounted for a large number of grant applications, but the pattern seems to have changed since 1985 as other areas accounted for the majority of applications (Table 2.1).

Carpenter ant control grants solely funded by the City

Carpenter ant control grants are awarded entirely from the City's own resources. Applicants can get 25% of the cost of chemical treatment to a maximum of $125. In 1988, the City awarded 29 grants amounting to $2,097. The average cost of treatment was $296 and the average grant was $72.00.

Table 2.1

Houses Treated or Approved for Treatment for Carpenter Ants by Period and Areas

Period	Areas 1-3		4-9		10-11		Total	
	#	%	#	%	#	%	#	%
1966-80	11	22	*	*	40	78	51	100
1981	1	4	*	*	24	96	25	100
1982	3	8	*	*	34	92	37	100
1983	--	--	22	37	37	63	59	100
1984	2	7	11	35	18	58	31	100
1985	2	6	20	57	13	37	35	100
1986	2	6	20	65	9	29	31	100
1987	4	14	16	55	9	31	29	100
1988	--	--	16	55	13	45	29	100
TOTAL	25	8	105	32	197	60	327	100

* *No figures were available for Areas 4-9 prior to 1983. Please see notes regarding Appendices 2.1 and 2.2.*

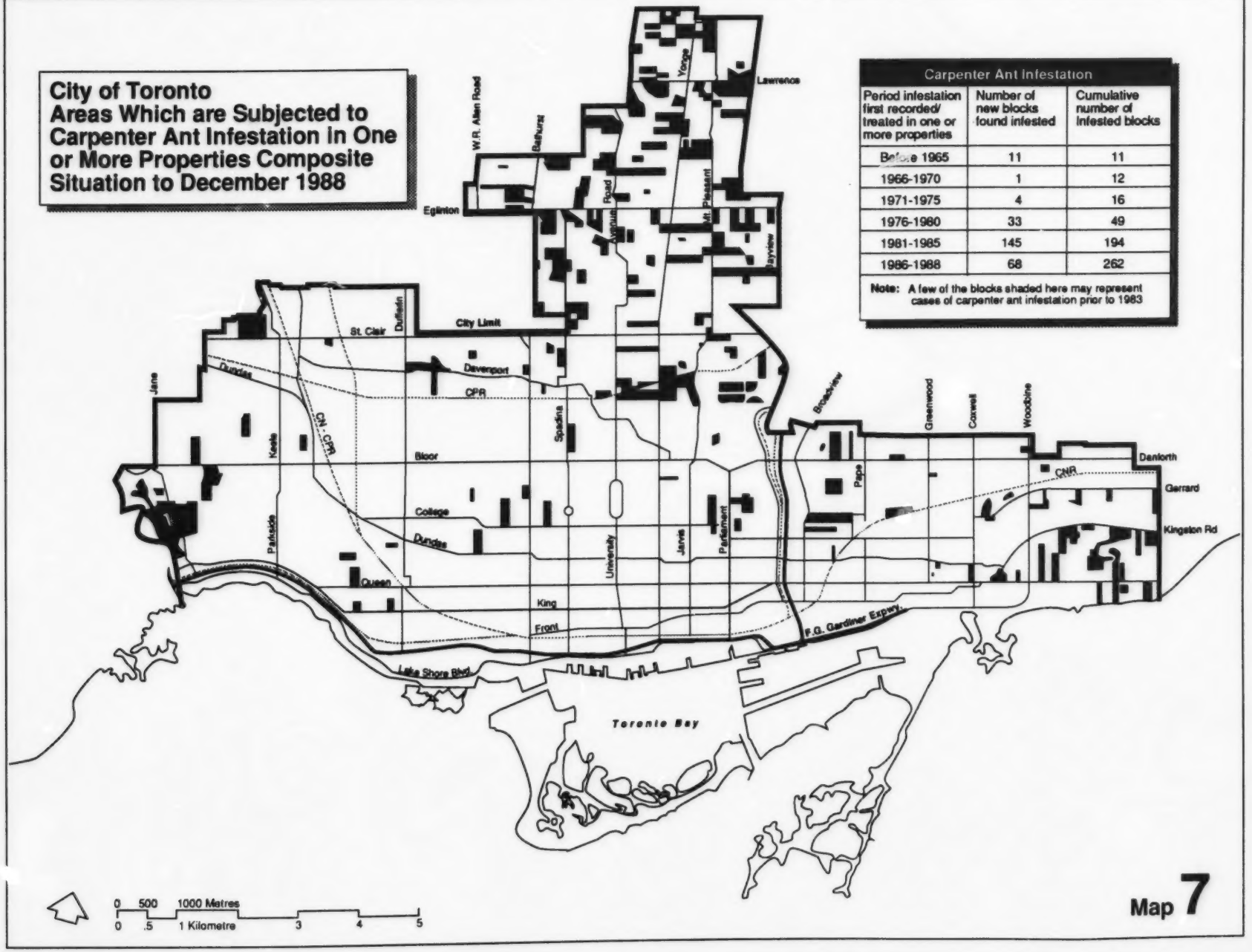
Table 2.2

Cumulative Number of Blocks Where One or More Properties Recorded Infested for the First Time by Carpenter Ants by Selected Year and Areas

Period	Areas 1-3		4-9		10-11		Total	
	#	%	#	%	#	%	#	%
1980	9	18	*	*	40	82	49	100
1985	17	9	43	22	134	69	194	100
1986	19	9	58	27	138	64	215	100
1987	23	10	71	30	146	60	240	100
1988	23	9	82	31	159	60	262	100

* *No figures are available for Areas 4-9 prior to 1983. Please see notes regarding Appendices 2.1 and 2.2.*

City of Toronto
Areas Which are Subjected to Carpenter Ant Infestation in One or More Properties Composite Situation to December 1988



Carpenter Ant Infestation		
Period infestation first recorded/ treated in one or more properties	Number of new blocks found infested	Cumulative number of infested blocks
Before 1965	11	11
1966-1970	1	12
1971-1975	4	16
1976-1980	33	49
1981-1985	145	194
1986-1988	68	262

Note: A few of the blocks shaded here may represent cases of carpenter ant infestation prior to 1983

Map 7

Statistics:

Appendices

TERMITE CONTROL STATISTICS

APPENDIX 1.1

HOUSES TREATED / APPROVED FOR TREATMENT UNDER THE TERMITE CONTROL PROGRAM BY PERIOD AND AREA, 1965 - 1988

	Central City Areas				East-End Areas				City
Period	4	5	6	Total 4-6	7	8	9	Total 7-9	Total
1965					1	54	12	67	67
%					1	81	18	100	100
1966-70	1		9	10	60	193	49	302	312
%			3	3	19	62	16	97	100
1971-75	16	1	42	59	205	248	118	571	630
%	2		7	9	33	39	19	91	100
1976-80	80	10	477	567	499	359	239	1097	1664
%	4	1	29	34	30	22	14	66	100
1981-85	245	99	143	487	409	509	438	1356	1843
%	13	5	8	26	22	28	24	74	100
1986	38	2	31	71	63	169	74	306	377
%	10	1	8	19	16	45	20	81	100
1987	20	1	18	39	128	166	71	365	404
%	5		5	10	40	17	90	100	
1988	30	6	30	66	136	122	109	367	433
%	7	1	7	15	32	28	25	85	100
1965-88	430	119	750	1299	1501	1820	1110	4431	5730
%	8	2	13	23	26	32	19	77	100

Note:

- *Area 6 figures up to 1980 include 424 houses treated under Kensington Neighbourhood Improvement program: 1976 - 28; 1977 - 228; and 1978 - 172.*

- *Areas 1, 2, 3, 10 and 11, where all cases have involved carpenter ants, not termites, are not included. Up to 1982, figures for Areas 4-9 might have possibly included a small number of carpenter ant cases which were not possible to separate before 1983 because of the manner in which records were maintained.*

- *Readers interested in statistics for any single year should refer to:*
  - *Termite Monitor 1985, for the period 1965-80, and*
  - *Termite Monitor 1987, for the period 1981-85.*

APPENDIX 1.2

DISTRIBUTION OF NEW BLOCKS AFFECTED BY TERMITE INFESTATION* BY PERIOD AND AREA, TO THE END OF 1988

	Central City Areas						East End Areas		
				Total				Total	
Year	4	5	6	4-6	7	8	9	7-9	Total
Before 1965	2		9	11	45	38	55	138	149
1965						7			7
1966-70	1			1	8	13	4	25	26
1971-75	4	1	4	9	10	8	7	25	34
1976-80	3	6	13	22	13	17	14	44	66
1981-85	15	16	9	40	22	20	34	76	116
1986	1	1	1	3	1	5	4	10	13
1987	5		2	7	3	3	3	9	16
1988	2		2	4	5		1	6	10
Total	33	24	40	97	107	111	122	340	437

* *Where infestation was recorded or treated for the first time in the given period in one or more properties.*

Appendix 1.5 provides data for the period before 1965 and for any single year from 1965, by municipal ward and block size in terms of house-form dwelling stock located within each block.

APPENDIX 1.3

TOTAL BLOCKS AND BLOCKS AFFECTED BY TERMITES AREA, 1987

Ward	Total # of Blocks*	Number of Affected Blocks: Where Houses Treated**	Where No Houses Treated***	Total	Affected as % of Total Blocks
4	204	33		33	16
5	251	24		24	10
6	461	35	5	40	9
4-6	**916**	**92**	**5**	**97**	**11**
7	251	91	16	107	43
8	251	103	8	111	44
9	281	109	13	122	43
7-9	**783**	**303**	**37**	**340**	**43**
TOTAL	1,699	395	42	427	25

* *The 1,381 blocks in Wards 1, 2 3, 10 and 11 are not included as no active termite infestation has been recorded there.*

** *One or more houses within the block treated or approved for treatment under the Termite Control Program.*

*** *Infestation in these blocks was detected prior to 1965 but no houses have so far been treated or approved for treatment under the Termite Control Program (Appendix 1.2 and 1.5).*

APPENDIX 1.4

TOTAL HOUSE-FORM DWELLING STOCK*, HOUSES TREATED/APPROVED FOR TREATMENT AND STOCK LOCATED WITHIN BLOCKS AFFECTED BY TERMITES BY AREA, 1988

Area	Total House-Form Dwelling Stock**	Houses Treated or Approved for Treatment			Houses Located Within Affected Blocks	
		Number	As % of Total Stock	As % of Houses In Affected Blocks	Number***	As % of Total Stock
4	8,443	430	5	20	2,080	25
5	10,115	113	1	7	1,703	17
6	8,881	750	8	46	1,620	18
4-6	**27,439**	**1,299**	**4.7**	**24**	**5,403**	**20**
7	7,091	1,501	21	33	4,578	65
8	13,408	1,820	14	26	6,906	51
9	13,292	1,110	8	17	6,504	49
7-9	**33,791**	**4,431**	**13**	**25**	**17,988**	**53**
TOTAL	**61,230**	**5,730**	**9**	**24**	**23,391**	**38**

* *Dwellings in non-apartment type buildings (mainly in the owner-occupied, tenant-occupied and owner/tenant-occupied categories) based on the City of Toronto data from the Standard Assessment system of the Ontario Ministry of Revenue (1986 Survey for taxation in 1987). The difference between the dwelling stock figures appearing here and those in the previous Termite Monitors, (prior to 1988), is explained mainly by updating of the housing stock data to 1986. The updated figures take into account net change in the stock due to demolition, new construction and conversion or de-conversion between 1980 and 1986.*

** *The 54,439 house-form dwellings located in 1,381 blocks in Areas 1, 2, 3, 10 and 11 are not shown as no active termite infestation was assumed to have occurred there since the introduction of termite control program in 1965.*

*** *Total number of houses located within the blocks where infestation has been recorded in one or more properties, including 42 blocks found infested (and therefore presumably treated) before 1965 but where no houses yet treated or approved for treatment under the Termite Control Program (Appendix 1.3).*

INTRODUCTION

APPENDIX 1.5

INVENTORY OF NEW CITY OF TORONTO BLOCKS BECOMING SUBJECTED TO TERMITE INFESTATION BY YEAR AND SIZE OF HOUSE-FORM DWELLING STOCK, 1988

This inventory shows the City of Toronto blocks subject to termite infestation, by the year in which infestation was first recorded or treated, in one or more properties, in each of those blocks. It also shows the number of house-form dwellings located in each of the subject blocks.

The year indicated represents the year in which infestation was first recorded or treated in one or more properties located within the subject block.

In column one, newly infested blocks in a given year are listed serially by Area division or just by Area, and the total number of blocks is indicated in Column Two. The 'Areas' represent the eleven municipal wards as they existed until civic elections in November, 1988.

In column three, the three numbers respectively denote the Area, the division and the subject block number, based on the City of Toronto Assessment Block map which shows the boundaries and numbering of each of those areas. For example, 4-2-44 indicates Area 4, Division 2 and Block 44.

Columns four and five indicate the size of the subject blocks in terms of existing stock of house-form (non-apartment type) dwellings, (ie., the sum total of owner-occupied, tenant-occupied and owner/tenant occupied houses located within the subject block) based on the City of Toronto data from the Standard Assessment Systems (SAS) of the Ontario Ministry of Revenue. The size of total house-form dwelling stock located within the blocks listed here should not be confused with the number of houses actually treated or approved for treatment annually which appear elsewhere in this report and represents only a fraction of the total house-form stock within those blocks.

The house-form dwelling stock figures appearing in the last column in respect of all the blocks where infestation was recorded up to the end of 1981, are based on the property assessment survey carried out in 1980 for the purpose of taxation in 1981. The figures for all the blocks recorded as infested from 1982 onwards, are for the year immediately preceding the given year. For example, the dwelling stock figures for 1988, are based on the 1987 enumeration for purpose of taxation in 1988.

This inventory is the basis of maps showing the spread of termites in the City of Toronto.

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
Before 1965				
Area 4				
1		4-2-44	68	
2		4-2-65	44	
	2			112
Area 6				
1		6-4-33	--	
2		6-4-52	4	
3		6-4-54	14	
4		6-5-29	25	
5		6-5-47	--	
6		6-5-48	67	
7		6-5-67	73	
8		6-5-68	76	
9		6-8-02	--	
	9			259
Area 7				
1		7-1-17	93	
2		7-1-18	86	
3		7-1-19	17	
4		7-1-20	90	
5		7-1-21	56	
6		7-1-26	--	
7		7-1-53 (1)	)	
8		7-1-53 (2)	38	
9		7-1-55	38	
10		7-1-56	20	
11		7-1-57	32	
12		7-1-58	1	
13		7-1-59	15	
14		7-1-65	--	
15		7-1-66	--	
16		7-1-67	12	
17		7-1-68	9	
18		7-1-70	9	
19		7-1-72	12	
20		7-1-73	9	537
1		7-2-04	30	
2		7-2-30	57	87

(1) No.	(2) Total No.of Blocks	(3) Area Division And Block Number	(4) House-Form Dwelling Stock	(5) Total House-Form Dwelling Stock
1		7-3-03	--	
2		7-3-04	--	
3		7-3-06 (1)	13	
4		7-3-06 (2)	--	
5		7-3-07	43	
6		7-3-08	66	
7		7-3-09	15	
8		7-3-10	51	
9		7-3-11	33	
10		7-3-12	65	
11		7-3-13	93	
12		7-3-14	14	
13		7-3-15	15	
14		7-3-16	58	
15		7-3-23	38	
16		7-3-24	81	
17		7-3-26	77	662
1		7-5-04	44	
2		7-5-12	59	
3		7-5-15	41	
4		7-5-16	72	
5		7-5-17	80	
6		7-5-18	96	392
	45			1,678
Area 8				
1		8-1-17	--	
2		8-1-18	--	
3		8-1-32	18	18
1		8-2-04	--	
2		8-2-18	--	
3		8-2-19	34	
4		8-2-20	59	93
1		8-3-15	39	
2		8-3-16	78	
3		8-3-17	64	
4		8-3-18	124	
5		8-3-19	127	
6		8-3-20	77	
7		8-3-21	134	
8		8-3-35	69	
9		8-3-50	63	

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
10		8-3-53	97	872
1		8-4-08	38	
2		8-4-14	110	
3		8-4-19	59	
4		8-4-31	25	
5		8-4-34	41	
6		8-4-48	73	
7		8-4-49	61	
8		8-4-51	77	484
1		8-5-01 (1)	267	
2		8-5-01 (2)	65	
3		8-5-02	118	
4		8-5-04	66	
5		8-5-05	52	
6		8-5-06	49	
7		8-5-07	57	
8		8-5-09	36	
9		8-5-10	67	
10		8-5-47	88	
11		8-5-55	11	
12		8-5-56	12	
13		8-5-60	38	926
	38			2,393
Area 9				
1		9-2-09	65	
2		9-2-10	57	
3		9-2-11	46	
4		9-2-12	29	
5		9-2-13	93	
6		9-2-21	27	
7		9-2-22	71	
8		9-2-23	48	
9		9-2-24	9	445
1		9-3-20	124	124
1		9-4-02	49	
2		9-4-04	30	
3		9-4-05	38	
4		9-4-06	41	
5		9-4-07	33	

(1) (2) (3) (4) (5)

No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
6		9-4-08	27	
7		9-4-09	134	
8		9-4-10	60	
9		9-4-11	44	
10		9-4-12	31	
11		9-4-13	57	
12		9-4-14	12	
13		9-4-16	113	
14		9-4-18	80	
15		9-4-19	46	
16		9-4-20	80	
17		9-4-21	24	
18		9-4-22	20	
19		9-4-23	30	
20		9-4-24	39	
21		9-4-25	64	
22		9-4-26	37	
23		9-4-51	38	1,127
1		9-5-05	34	
2		9-5-06	48	
3		9-5-07	60	
4		9-5-08	52	
5		9-5-09	44	
6		9-5-10	53	
7		9-5-11 (1)	27	
8		9-5-11 (2)	21	
9		9-5-12	48	
10		9-5-13	45	
11		9-5-14	39	
12		9-5-15	51	
13		9-5-16	79	
14		9-5-17	55	
15		9-5-18	49	
16		9-5-19	18	
17		9-5-20	28	
18		9-5-21	27	
19		9-5-33	92	
20		9-5-35	81	951

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1		9-6-12	59	
2		9-6-29	61	120
	55			2,767
	149	Total All Areas Before 1965		7,209
1965 - New Blocks				
1		8-2-15	156	
2		8-2-22	64	
3		8-3-01	128	
4		8-3-02	71	
5		8-3-22	125	
6		8-4-55	58	
7		8-5-57	13	
	7	Total All Areas - 1965		615
1966 - New Blocks				
1		7-2-12	38	
1		8-5-03	75	
1		9-4-01	51	
	3	Total All Areas - 1966		164
1967 - New Blocks				
1		7-2-26	31	
2		7-4-01	5	
1		8-2-16	44	
2		8-2-20	8	
1		9-3-36	52	
	5	Total All Areas - 1967		140
1968 - New Blocks				
1		7-2-28	87	
2		7-2-29	91	
3		7-3-25	79	
4		7-4-09	61	
1		8-2-07	199	
2		8-4-09	47	

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1		9-4-03	85	
	7 Total All Areas - 1968			649
1969 - New Blocks				
1		7-5-49	81	
1		8-1-41	80	
2		8-2-10	102	
3		8-4-53	153	
1		9-2-20	137	
	5 Total All Areas - 1969			553
1970 - New Blocks				
1		4-4-05	153	
1		8-3-55	211	
2		8-4-47	13	
3		8-5-25	69	
4		8-5-50	68	
5		8-5-58	13	
	6 Total All Areas - 1970			527
1971 - New Blocks				
1		4-2-41	67	
1		6-5-65	30	
2		6-5-70	40	
1		7-3-21	14	
1		8-3-51	60	
2		8-5-26	37	
1		9-3-02	44	
	7 Total All Areas - 1971			292
1972 - New Blocks				
1		7-1-15	22	
2		7-2-13	50	
1		8-1-42	50	
2		8-3-14	101	
	4 Total All Areas - 1972			223

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1973 - New Blocks				
1		4-2-20	11	
2		4-2-40	35	
1		6-5-46	119	
1		7-3-27	92	
2		7-3-38	92	
3		7-4-10	54	
1		8-3-23	108	
1		9-6-45	26	
	8	**Total All Areas - 1973**		537
1974 - New Blocks				
1		4-2-43	60	
1		5-1-63	88	
1		8-1-31	29	
2		8-3-31	29	
1		9-3-50	31	
2		9-6-26	86	
	6	**Total All Areas - 1974**		323
1975 - New Blocks				
1		6-5-69	75	
1		7-2-05	19	
2		7-2-09	33	
3		7-4-02	39	
4		7-4-08	54	
1		8-4-16	53	
1		9-2-01	68	
2		9-3-37	41	
3		9-6-37	42	
	9	**Total All Areas - 1975**		424
1976 - New Blocks				
1		4-2-17	40	

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1		5-4-22	41	
1		6-5-54	33	
1		7-2-08	24	
2		7-4-25	54	
3		7-5-13	37	
1		8-2-14	87	
2		8-3-52	70	
3		8-4-18	69	
1		9-5-03	185	
	10	Total All Areas - 1976		640
1977 - New Blocks				
1		6-5-72	38	
2		6-5-49	39	
3		6-7-11	243	
1		8-4-20	112	
2		8-5-43	65	
3		8-5-51	65	
1		9-4-32	127	
2		9-4-33	54	
	8	Total All Areas - 1977		743
1978 - New Blocks				
1		6-5-50	91	
2		6-5-51	60	
3		6-5-64	26	
4		6-5-71	14	
5		6-5-73	88	
6		6-5-74	40	
1		7-1-71	20	
2		7-3-28	85	
3		7-4-11	24	
4		7-4-28	51	
1		8-1-43	88	
2		8-2-08	124	
3		8-4-07	28	

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1		9-2-18	50	
2		9-3-42	36	
3		9-3-46	48	
4		9-5-37	25	
	17	Total All Areas - 1978		898
1979 - New Blocks				
1		4-2-42	93	
1		6-6-36	50	
1		7-2-10	75	
2		7-4-03	43	
3		7-5-51	64	
1		8-2-06	123	
2		8-2-12	32	
3		8-3-57	72	
4		8-5-13	46	
1		9-3-08	71	
2		9-3-19	77	
3		9-5-43	39	
4		9-6-10	51	
	13	Total All Areas - 1979		836
1980 - New Blocks				
1		4-4-07	202	
1		5-1-62	82	
2		5-3-12	45	
3		5-3-52	66	
4		5-4-08	197	
5		5-4-09	193	
1		6-5-80	43	
2		6-7-37	21	
1		7-5-07	48	
2		7-5-48	74	
3		7-5-52	38	

(1) No.	(2) Total No.of Blocks	(3) Area Division And Block Number	(4) House-Form Dwelling Stock	(5) Total House-Form Dwelling Stock
1		8-1-33	103	
2		8-4-25	67	
3		8-4-55	96	
4		8-5-08	39	
1		9-6-13	56	
2		9-6-22	51	
3		9-6-43	75	
	18	Total All Areas - 1980		1,496
1981 - New Blocks				
1		4-2-14	55	
2		4-2-16	87	
3		4-2-18	23	165
1		5-1-02	17	
2		5-1-61	117	
3		5-2-37	59	
4		5-3-30	11	
5		5-4-25	28	232
1		6-5-44	180	
2		6-5-45	137	
3		6-7-44	36	353
1		7-1-60	30	
2		7-4-20	8	
3		7-4-47	58	
4		7-5-08	169	
5		7-5-39	9	
6		7-5-42	46	
7		7-5-53	38	358
1		8-3-13	77	
2		8-3-25	131	
3		8-3-46	112	
4		8-5-21	92	412
1		9-1-04	186	
2		9-1-06	69	
3		9-1-14	34	
4		9-1-19	33	
5		9-1-21	10	
6		9-1-28	33	
7		9-2-19	54	
8		9-3-18	85	

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
9		9-3-39	72	
10		9-3-44	30	
11		9-4-17	53	
12		9-6-17	49	708
	34	**Total All Areas - 1981**		2,228
1982 - New Blocks				
1		4-3-15	128	
2		4-3-29	59	
3		4-4-04	93	280
1		5-1-64	55	
2		5-3-09	131	
3		5-3-20	13	
4		5-3-65	35	
5		5-4-19	44	
6		5-4-21	27	
7		5-4-24	91	
8		5-4-32	25	421
1		6-4-51	7	
2		6-6-33	37	
3		6-7-15	89	133
1		7-2-03	20	
2		7-3-29	47	
3		7-4-15	51	
4		7-4-36	56	
5		7-4-46	57	
6		7-5-06	100	
7		7-5-09	145	476
1		8-1-27	37	
2		8-4-02	22	
3		8-4-17	50	
4		8-4-62	51	
5		8-5-30	62	222
1		9-1-26	36	
2		9-2-04	49	
3		9-2-08	35	
4		9-3-17	84	
5		9-3-22	28	
6		9-3-24	29	

(1) No.	(2) Total No.of Blocks	(3) Area Division And Block Number	(4) House-Form Dwelling Stock	(5) Total House-Form Dwelling Stock
7		9-3-40	13	
8		9-3-54	29	
9		9-5-26	43	
10		9-5-30	26	
11		9-5-31	32	404
	37	**Total All Areas - 1982**		1,936
1983 - New Blocks				
1		4-2-29	70	
2		4-3-28	86	156
1		5-1-69	70	
2		5-3-47	52	122
1		7-4-19	32	
2		7-4-48	38	70
1		8-3-49	43	
2		8-4-06	92	
3		8-4-24	70	
4		8-5-36	54	259
1		9-6-01	34	
2		9-6-28	57	91
	12	**Total All Areas - 1983**		698
1984 - New Blocks				
1		4-2-03	79	
2		4-3-13	145	
3		4-2-47	61	285
1		6-6-32	37	
2		6-6-67	9	46
1		7-2-06	29	
2		7-2-14	8	
3		7-4-13	47	
4		7-4-34	38	
5		7-5-34	64	186
1		8-3-29	39	
2		8-3-33	98	
3		8-4-10	43	
4		8-4-22	51	
5		8-4-29	120	351

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1		9-1-01	50	
2		9-2-15	59	
3		9-4-48	18	
4		9-4-62	84	
5		9-6-02	58	
6		9-6-18	31	
7		9-6-21	60	360
	22	Total All Areas - 1984		1,228
1985 - New Blocks				
1		4-3-01	133	
2		4-3-23	33	
3		4-4-01	69	
4		4-4-45	58	293
1		5-1-72	63	63
1		6-5-60	41	41
1		7-1-50	11	11
1		8-1-25	47	
2		8-1-30	181	228
1		9-4-27	76	
2		9-6-05	147	223
	11	Total All Areas -1985		859
1986 - New Blocks				
1		4-2-24	54	
1		5-1-65	66	
1		6-6-66	22	
1		7-4-16	44	
1		8-1-40	33	
2		8-4-15	66	
3		8-4-33	23	
4		8-4-63	29	
5		8-4-65	13	164

(1)	(2)	(3)	(4)	(5)
No.	Total No.of Blocks	Area Division And Block Number	House-Form Dwelling Stock	Total House-Form Dwelling Stock
1		9-3-03	120	
2		9-3-52	55	
3		9-5-27	38	
4		9-6-16	61	274
	13	Total All Areas - 1986		624
1987 - New Blocks				
1		4-2-01	60	
2		4-2-02	120	
3		4-2-39	9	
4		4-3-04	34	
5		4-3-18	77	300
1		6-6-78	29	
2		6-7-38	51	80
1		7-2-11	44	
2		7-3-34	41	
3		7-4-04	32	117
1		8-3-03	32	
2		8-3-06	42	
3		8-5-28	54	128
1		9-2-16	42	
2		9-3-34	90	
3		9-4-56	49	181
	16	Total All Areas - 1987		806
1988 - New Blocks				
1		4-2-19	2	
2		4-3-27	49	51
1		6-5-24	15	
2		6-7-51	19	34
1		7-1-16	58	
2		7-3-30	53	
3		7-4-05	43	
4		7-4-07	65	
5		7-4-12	16	235
1		9-5-44	34	34
	10	Total All Areas - 1988		354

CARPENTER ANT CONTROL STATISTICS

Note re: Appendices 2.1, 2.2 and Map 7

1. Since the beginning of the City's termite control program in 1965, only carpenter ant and no termite infestation cases seem to have been discovered in Areas 1, 2, 3, 10 and 11. Therefore, statistics for these areas can be assumed to represent cases of carpenter ant infestation exclusively.

2. In Areas 4 to 9, it is important to point out that the actual number of houses and blocks could possibly be somewhat higher than indicated by Appendix 2.1 and 2.2 or the tables. In the areas in question, both kinds of infestation occurred, but because of the difficulty of separating carpenter ant cases from those of termites due to the manner in which records were maintained before 1983, it is not possible to fully document carpenter ant cases prior to 1983. However, since the number of such cases would be small, it does not significantly influence the assessment of the carpenter ant problem in the City.

APPENDIX 2.1

Houses Treated or Approved for Treatment for Carpenter Ants by Area and Year

Year	Areas 1	2	3	4	5	6	7	8	9	10	11	Total
1966		2									2	4
1974			1									1
1975										1	2	3
1976										1	1	2
1977										2		2
1978		6								2	3	11
1979		1								7	8	16
1980	1									3	8	12
1981	1									12	12	25
1982	2		1							13	21	37
1983					3	1	4	2	12	15	22	59
1984	1		1		2	1	2		6	9	9	31
1985	1		1		1	1	6	5	7	7	6	35
1986	1	1		1	1		4	1	13	3	6	31
1987	4				7		1	1	7	5	4	29
1988				2	2				12	9	4	29
Total	11	10	4	3	16	3	17	9	57	89	108	327

Note: *The figures for the period before 1983 for Areas 4 to 9 could possibly be somewhat higher than indicated here as explained in the notes regarding appendices.*

APPENDIX 2.2

Blocks where Carpenter Ant Infestation First Recorded in One or More Properties by Period and Area

Period	1	2	3	4	5	6	7	8	9	10	11	Total
Before 1966	2	1								4	4	11
1966-70		1										1
1971-75			1							1	2	4
1976-80	1	3								12	17	33
1981	1									8	10	19
1982	2		1							9	17	29
1983					2	1	4	2	8	10	17	44
1984	1		1		2	1	2		5	7	7	26
1985	1		1		1	1	4	5	5	5	4	27
1981-85	**5**		**3**		**5**	**3**	**10**	**7**	**18**	**39**	**55**	**145**
1986	1	1		1	1		3	1	9	1	3	21
1987	4				6		1	1	5	4	4	25
1988				2	2				7	7	4	22
TOTAL	**13**	**6**	**4**	**3**	**14**	**3**	**14**	**9**	**39**	**68**	**89**	**262**

* *As explained in notes re: appendices, the block figures for the period before 1983 in Areas 4 to 9 could possibly be somewhat higher than indicated here.*

Readers interested in statistics for single years from 1966 to 1980, are referred to Appendix 2.2 in Termite Monitors 1985 and 1986.